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EXAMINER	
TRUONG, CAM Y T	
ART UNIT	PAPER NUMBER
2172	

DATE MAILED: 01/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/892,837	KLINDT ET AL.	
	Examiner	Art Unit	
	Cam Y T Truong	2172	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 October 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

1. Applicant's arguments filed 10/29/03 have been fully considered but they are not persuasive. Claims 1-30 are pending in this Office Action.

Applicant argues that Bapat does not teach "each object in the hierarchy is associated with a query and recursively retrieving object definitions for one or more database objects associated with a query to produce an ordered set of object definition". Bapat teaches that each object in the hierarchy is processed by a loop beginning at step 292, which selects every class definition in the object class hierarchy. Each class definition is retrieved at step 292 until no more objects in hierarchy are processed. Each object in the hierarchy is processed when the application make a call to the new method such as retrieve. It means that objects in the hierarchy are associated with the application's call. The application's call is represented as a query. Recursively is defined as to repeat again. Since each class definition, which is retrieved in a loop, is repeated many times until no more objects class in hierarchy is processed, thus, each class definition in hierarchy is retrieved recursively and in order. Each class definition contains one or more object definitions. For the above reasons, definitely, when system retrieves each class definition in hierarchy, the system retrieves each object definition of the class definition to produce an ordered set of object definitions too (fig. 13, col. 10, lines 35-65; col. 6, lines 65-67).

Applicant argues that Bapat does not teach "buiding a copy of the database structure using the ordered set of object definitions". Bapat teaches that a class hierarchy structure is translated into the relational table structure by mapping parent

class 22 to a table 32. In a similar manner, class 24 is mapped to a table 38. A class in hierarchy includes objects definitions. Since, the system maps parent class 22 to a table 32 before mapping class 24 to a table 38, thus the system retrieves set of class definitions or object definitions in order. By mapping a class hierarchy structure into the relational table, the system creates a relational table structure, which contains all of classes or objects of the hierarchy structure. Thus, the relational table structures are presented as a copy of the hierarchy class structure. The hierarchy class structure is a data structure (col. 6, lines 60-65; col. 7, lines 1-5, figs. 1-3).

Applicant argues that Bapat does not teach "categorizing each identified object into a category". Baptat teaches class site contains object name, address, phone_no, site-category. Class vendor contain object vendor name, object vendor address, object vendor phone number. The above information shows that each object is classified into different classes. Each class is represented as a category (col. 19, lines 35-50).

For the above reason, examiner believed that rejection of the last office action was proper.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 2, 9-12, 19-22, 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bapat (USP 5295256).

As to claims 1, 11 and 21, Bapat teaches the claimed limitations:

"recursively retrieving object definitions for one or more database objects associated with a query to produce an ordered set of objects definitions" as each object in the hierarchy is processed by a loop beginning at step 292, which selects every class definition in the object class hierarchy. Each class definition is retrieved at step 292 until no more objects in hierarchy are processed. Each object in the hierarchy is processed when the application make a call to the new method such as retrieve. It means that objects in the hierarchy are associated with the application's call. Thus, each object in hierarchy is associated with the application's call. The application's call is represented as a query. Recursively is defined as to repeat again. Since each class definition, which is retrieved in a loop, is repeated many times until no more objects class in hierarchy is processed, thus, each class definition in hierarchy is retrieved recursively and in order. Each class definition contains one or more object definitions. For the above reasons, definitely, when system retrieving each class definition in hierarchy, the system retrieves each object definition of the class definition to produce an ordered set of object definitions too (fig. 13, col. 10, lines 35-65; col. 6, lines 65-67).

Bapat does not clearly teach the claimed limitation "building a copy of the database structure using the ordered set of object definition". Bapat teaches a class hierarchy structure is translated into the relational table structure by mapping parent class 22 to a table 32. In a similar manner, class 24 is mapped to a table 38. A class in hierarchy includes objects definitions. Since, the system maps parent class 22 to a table 32 before mapping class 24 to a table 38, thus the system retrieves set of class

definitions or object definitions in order. By mapping a class hierarchy structure into the relational table, the system creates a relational table structure, which contains all of classes or objects of the hierarchy structure. Thus, the relational table structures are presented as a copy of the hierarchy class structure. The hierarchy class structure is a data structure (col. 6, lines 60-65; col. 7, lines 1-5, figs. 1-3).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Bapat's teaching of a class hierarchy structure is translated into the relational table structure by mapping all classes to tables of a data structure in order to allow any user can create a new data structure in order or store objects in a new data structure for future processing when the system is corrupted.

As to claims 2, 12 and 22 Bapat teaches the claimed limitations:

"recursively identifying objects associated with the query (col. 10, lines 35-45);

"categorizing each identified object into a category" as class site contains object name, address, phone_no, site-category. Class vendor contain object vendor name, object vendor address, object vendor phone number. The above information shows that each object is classified into different classes. Each class is represented as a category (col. 19, lines 35-50);

"retrieving an object definition for each identified object using a tool corresponding to the category with which the identified object is connected" as each object in the hierarchy is processed by a loop beginning at step 292 which selects every class definition in the object class hierarchy. Each class is retrieved. The system has

the type of object. The above information shows that the system has included a tool to retrieve an object definition corresponding to the type of an object are connected (col. 10, lines 35-45; col. 35, lines 65-67).

As to claim 9, 19 and 29, Bapat teaches the claimed limitation "the object definitions are ordered so that each object definition is ordered before the definition of any object that reference it" as each object in the hierarchy is processed by a loop beginning at step 292 which selects every class definition in the object class hierarchy. Each class definition is retrieved. Multiple inheritance-in which a class may inherit attributes from more than on parent class-is easily handled by creating one reference column as a pointer into the schema for each parent class. The above information shows that class definitions are stored in order in the object class hierarchy before the definition of any object that reference it (col. 10, lines 35-45; col. 23, lines 45-55).

As to claims 10, 20 and 30, Bapat does not clearly teach the claimed limitation "recursively retrieving object definition for one or more database object includes looking for references to the one or more database objects in a data dictionary". However, Bapat teaches that each object in the hierarchy is processed by a loop beginning at step 292 which selects every class definition in the object class hierarchy. Each class definition is retrieved. Multiple inheritance-in which a class may inherit attributes from more than on parent class-is easily handled by creating one reference column as a pointer into the schema for each parent class. A Object Dictionary contains metaclass

information, or information about the overall schema of the application domain. The population of the Object Dictionary was described in detail in connection with FIG. 11. It contains the list of all classes, and includes information about attributes, superclasses, subclasses, and methods (col. 10, lines 35-45; col. 23, lines 45-55; col. 44, lines 45-60). Since objects are stored in hierarchy which included classes, thus, it is obvious that retrieving object definition includes looking for references to the one or more database objects in a object dictionary.

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Bapat's teaching of retrieving each class definition in the object class hierarchy. Object definition contains list of all classes, superclasses, subclasses. Multiple inheritance-in which a class may inherit attributes from more than on parent class-is easily handled by creating one reference column as a pointer into the schema for each parent class in order to read or create structure of objects during processing objects.

4. Claims 3, 13 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bapat (USP 5295256) in view of Nackman et al (or hereinafter "Nackman") (USP 6182281).

As to claims 3, 13 and 23, Bapat teaches the claimed limitations the categories include tables and views, join indexes, trigger" as tables, views, the join column into the parent class table will be used as the unique index, triggers (col. 8, line 20, col. 37, lines 30-35; col. 40, lines 1-5). Bapat fails to teach the claimed limitation "macros". However,

Bapat teaches the different type of objects including tables, views, joined indexes (col. 8, line 20, col. 37, lines 30-35; col. 40, lines 1-5). Also, Nackman teaches Macros (col. 7, lines 35-37). It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Nackman's teaching of macros to Bapat's system in order to store a object in a dictionary.

5. Claims 4, 14 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bapat in view of Nackman and Tung Ng et al (or hereinafter "Tung") (USP 6279008).

As to claims 4, 14 and 24, Bapat discloses the claimed limitation subject matter in claim 1, except the claimed limitation "the tool is view statement if the identified object.....as a macro". However, Bapat teaches the source SQL statement for defining triggers, create table SQL command (col. 10, lines 40-45; col. 40, lines 1-5). Also, Tung's teaching of show-table-view button 1105 to show a view of tables corresponding to the database state 1204. The table view permits access to tables and database information associated with the database application state 1206 (col. 11, lines 60-67). Nackman teaches any Macros defined in the source, recognized by #defined command (col. 10, lines 32-35).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Bapat's teaching of the source SQL statement for defining triggers, create table SQL command, Tung's teaching of show-table-view button 1105 to show a view of tables corresponding to the database state 1204. The

table view permits access to tables and database information associated with the database application state 1206 and Nackman's teaching of any Macros recognized by # defined command in order to allow any user can have many choices for displaying objects or displaying configuration of any object to a user.

6. Claims 5, 15 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bapat in view of Ma et al (or hereinafter "Ma") (USP 5920725).

As to claims 5, 15 and 25, Bapat teaches the claimed limitation "retrieving unretrieved object definition.....the query" as (col. 10, lines 35-45). Bapat does not teach the claimed limitation "adding to the set of objects known to be associated with query .....associated with the query.....repeating items a and b....associated with the query". However, Bapat teaches each object in the hierarchy is processed by a loop beginning at step 292 which selects every class definition in the object class hierarchy. Each class definition is retrieved (col. 10, lines 35-45). Also, Ma teaches to insert a new field in database records requires that the database's format or schema be modified, step 30. Adding the cell-phone field to the database's records can be accomplished with the statement: alter table employee add cellno varchar 20, which alters the employee table by adding a field named "cellno" having up to 20 characters. The interfaces or input and output parameters for program objects which read database records are modified, step 32. The interfaces of many objects can be modified by changing the data structure for accessing the database by

adding the new field: Class employee [private: char name[64]; char address[255]; char officeno[20]; char hiredate[10]; float salary; char dept[32]; (col. 2, lines 50-67). The above information shows that the system add a field named cellno associated with query to a data structure which include class employee. This class employee is represented as a object definition.

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Bapat's teaching of retrieving object definitions and Ma's teaching adding a field name to class employee in order to maintain object definition.

7. Claims 6, 16 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bapat in view of Tung.

As to claims 6, 16 and 26, Bapat discloses the claimed limitation subject matter in claim 1, except the claimed limitation "sending the ordered set of object definitions from a first computer to a second computer". However, Bapat teaches retrieving each object definitions (col. 10, lines 35-45). Also, Tung teaches that client sends database requests over Internet to server (col. 5, lines 55-57).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Bapat's teaching of retrieving each object definitions and Tung's teaching of sending database requests from client computer to server in order to allow a user can create a new database structure based on retrieved object definitions.

8. Claims 7-8, 8-18, 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bapat (USP 5295256) in view of Henckel (USP 6105036).

As to claims 7, 17 and 27, Bapat discloses the claimed limitation subject matter in claim 1, except the claimed limitation "changing the order of the ordered set of object definitions". However, Bapat teach each object in the hierarchy is processed by a loop beginning at step 292 which selects every class definition in the object class hierarchy. Each class definition is retrieved. This information shows that class definitions are stored in order in the object class hierarchy. Thus, each class definitions is retrieved in order (col. 10, lines 35-45). Also, Henckel teaches that the ordered arrangement of object definitions such that a visual indication of the arrangement of such object definitions in source code file is maintained. It means that the ordered arrangement of object definitions is modified (abstract, col. 6, lines 20-50).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Bapat's teaching of retrieving each object definitions and Henckel's teaching of the ordered arrangement of object definitions such that a visual indication of the arrangement of such object definitions in source code file is maintained to Bapat's system in order to save time for searching or displaying a object.

As to claims 8, 18, and 28, Bapat discloses the claimed limitation subject matter in claim 1, except the claimed limitation "changing the order of the order set of object definition....reference it". However, Bapat teach each object in the hierarchy is

processed by a loop beginning at step 292 which selects every class definition in the object class hierarchy. Each class definition is retrieved. This information shows that class definitions are stored in order in the object class hierarchy. Thus, each class definitions is retrieved in order (col. 10, lines 35-45). Also, Henckel teaches that the ordered arrangement of object definitions such that a visual indication of the arrangement of such object definitions in source code file is maintained. It means that the ordered arrangement of object definitions is modified (abstract, col. 6, lines 20-50).

It would have been obvious to a person of an ordinary skill in the art at the time the invention was made to apply Bapat's teaching of retrieving each object definitions and Henckel's teaching of the ordered arrangement of object definitions such that a visual indication of the arrangement of such object definitions in source code file is maintained to Bapat's system in order to save time for searching or displaying a object.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cam-Y Truong whose telephone number is (703-605-1169). The examiner can normally be reached on Mon-Fri from 8:00AM to 4:00PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene, can be reached on (703-305-9790). The fax phone numbers for the organization where this application or proceeding is assigned is (703) 872-9306

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703-305-3900).

Cam-Y Truong

12/30/03

SHAHID ALAM
PRIMARY EXAMINER